



## **ENVIRONMENTAL PROTECTION AGENCY**

**[FRL-9901-57-OAR]**

### **Alternative Method for Calculating Off-cycle Credits for Mercedes-Benz Vehicles Under the Light-duty Greenhouse Gas Emissions Program**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice.

**SUMMARY:** In the light-duty vehicle greenhouse gas rule for model year 2012 through 2016 vehicles, EPA established a program to allow automobile manufacturers to generate “off-cycle” carbon dioxide (CO<sub>2</sub>) credits by employing technologies that achieve CO<sub>2</sub> reductions in the real world but are not appropriately captured on the test procedures used by manufacturers to demonstrate compliance with the CO<sub>2</sub> standards. Under one of the program options, a manufacturer may develop and submit to EPA for approval an alternative demonstration methodology justifying eligibility for off-cycle credits and their amount. The regulations concerning off-cycle credits require an opportunity for public comment as part of EPA’s review of such an alternative methodology. EPA is requesting comment on an alternative methodology submitted by Mercedes-Benz for determining off-cycle credits for the following technologies: engine stop-start, high efficiency exterior lighting, infrared glazing, and active seat ventilation. The application is only for off-cycle credits for Mercedes-Benz vehicles for the 2012 through 2016 model years.

**DATES:** Comments must be received on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA–HQ– OAR–2013–0643, by one of the following methods:

- *On-Line at <http://www.regulations.gov>:* Follow the On- Line Instructions for Submitting Comments.

- *Email:* [a-and-r-docket@epa.gov](mailto:a-and-r-docket@epa.gov).

- *Fax:* (202) 566–1741.

- *Mail:* Air and Radiation Docket, Docket ID No. EPA–HQ–OAR–2013– 0643, U.S. Environmental Protection Agency, Mailcode: 6102T, 1200 Pennsylvania Avenue NW., Washington, DC 20460. Please include a total of two copies.

- *Hand Delivery:* EPA Docket Center, Public Reading Room, EPA West Building, Room 3334, 1301 Constitution Avenue NW., Washington, DC 20460. Such deliveries are only accepted during the Docket’s normal hours of operation, and special arrangements should be made for deliveries of boxed information.

*On-Line Instructions for Submitting Comments:* Direct your comments to Docket ID No. EPA–HQ–OAR–2013– 0643. EPA’s policy is that all comments received will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed

to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through <http://www.regulations.gov> or email.

The <http://www.regulations.gov> Web site is an “anonymous access” system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to EPA without going through <http://www.regulations.gov>, your email address will automatically be captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA’s public docket visit the EPA Docket Center homepage at <http://www.epa.gov/epahome/dockets.htm>.

Materials relevant to this proceeding are contained in the Air and Radiation Docket and Information Center, maintained in Docket ID No. EPA-HQ- OAR-2013-0643. Publicly available docket materials are available either electronically through <http://www.regulations.gov> or in hard copy at the Air and Radiation Docket in the EPA Headquarters Library, EPA West Building, Room 3334, located at 1301 Constitution Avenue NW., Washington, DC. The Public Reading Room is open to the public on all federal government work days from 8:30 a.m. to 4:30

p.m.; generally, it is open Monday through Friday, excluding holidays. The telephone number for the Reading Room is (202) 566-1744. The Air and Radiation Docket and Information Center's Web site is <http://www.epa.gov/oar/docket.html>. The electronic mail (email) address for the Air and Radiation Docket is: [a-and-r-docket@epa.gov](mailto:a-and-r-docket@epa.gov), the telephone number is (202) 566-1742, and the fax number is (202) 566-9744. An electronic version of the public docket is available through the federal government's electronic public docket and comment system. You may access EPA dockets at <http://www.regulations.gov>. After opening the <http://www.regulations.gov> Web site, enter EPA-HQ-OAR-2013-0643 in the "Enter Keyword or ID" fill-in box to view documents in the record. Although a part of the official docket, the public docket does not include Confidential Business Information (CBI) or other information whose disclosure is restricted by statute.

EPA will keep the record open until **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. All information will be available for inspection at the EPA Air Docket No. EPA-HQ-OAR-2013-0643. Persons with comments containing proprietary information must distinguish such information from other comments to the greatest extent possible and label it as "Confidential Business Information" ("CBI"). If a person making comments wants EPA to base its decision on a submission labeled as CBI, then a non-confidential version of the document that summarizes the key data or information should be submitted to the public docket. To ensure that proprietary information is not inadvertently placed in the public docket, submissions containing such information should be sent directly to the contact person listed below and not to the public docket. Information covered by a claim of confidentiality will be disclosed by EPA only to the extent allowed, and according to the

procedures set forth in 40 CFR part 2. If no claim of confidentiality accompanies the submission when EPA receives it, EPA will make it available to the public without further notice to the person making comments.

**FOR FURTHER INFORMATION CONTACT:** Roberts French, Environmental Protection Specialist, Office of Transportation and Air Quality, Compliance Division, U.S. Environmental Protection Agency, 2000 Traverwood Drive, Ann Arbor, MI 48105. Telephone: (734) 214–4380. Fax: (734) 214–4869. Email address: *french.roberts@epa.gov*.

## **SUPPLEMENTARY INFORMATION:**

### **I. Background**

In the model year (MY) 2012-2016 light-duty vehicle greenhouse gas (GHG) rule, EPA established an option for manufacturers to generate credits by employing technologies that achieve carbon dioxide (CO<sub>2</sub>) reductions in the real world but are not captured on the 2-cycle test procedures used to determine compliance with the fleet average standards (i.e., “off-cycle” credits). EPA adopted the off-cycle credit option to encourage the introduction of these types of technologies, believing that off-cycle CO<sub>2</sub> reductions should be considered in determining a manufacturer’s fleet average, and that a credit mechanism is an effective way to achieve this.

The MY 2012-2016 rule provided two ways for manufacturers to demonstrate the off-cycle emissions reduction capabilities of a technology and generate off-cycle credits, either through 5-cycle testing (which captures elements of real-world driving not captured by the 2-cycle compliance tests, including high speeds, rapid accelerations, and cold temperature operation) or an alternative demonstration methodology developed by the manufacturer and approved by EPA.<sup>1</sup> The MY 2017-2025 light-duty GHG rule streamlined the off-cycle credits program and provided a third pathway for credits, a pre-determined credits list that may be used beginning in MY 2014.<sup>2</sup>

The first pathway for a manufacturer to demonstrate off-cycle technology is to conduct 5-cycle emissions testing with and without the technology applied to the vehicle.<sup>3</sup> If the off-cycle emissions benefit of the technology is able to be adequately captured through 5-cycle testing, the manufacturer must conduct testing per the regulations, and submit the data to EPA.<sup>4</sup> This methodology was proposed in detail in the rulemakings, which included an opportunity for public comment, and therefore manufacturers' applications for credits using the 5-cycle process do not undergo additional public review.

The second pathway allows manufacturers to demonstrate off-cycle emissions reduction technology using an alternative methodology developed by the manufacturer in cases where the real world benefit of the technology cannot be adequately demonstrated using the 5-cycle test

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<sup>1</sup> 75 FR 25438-25440, May 7, 2010.

<sup>2</sup> 77 FR 62832-62839, October 15, 2012.

<sup>3</sup> 40 CFR 86.1869-12(c).

<sup>4</sup> 40 CFR 86.1869-12(c).

procedures.<sup>5</sup> The regulations regarding the alternative methodology, excerpted below, specify the data and information needed to support a manufacturer's off-cycle credit application.<sup>6</sup> The alternative methodology must be approved by EPA prior to the manufacturer generating credits. Also, as part of the EPA review, the alternative methodology must be made available for public comment.<sup>7</sup> EPA will consider public comments as part of its final decision to approve or deny the credit request.

The regulations for the alternative methodology provided at 40 CFR 86.1869-12(d)(1)(i)-(iv) specify that the alternative demonstration program must be approved in advance by the Administrator and should be based on modeling, on-road testing, on-road data collection, or other approved analytical or engineering methods, and should be robust, verifiable, and capable of demonstrating the real-world emissions benefit of the technology with strong statistical significance. Further, the alternative program should result in a demonstration of baseline and controlled emissions over a wide range of driving conditions and vehicles in order to minimize issues of data uncertainty. Additionally, the regulations at 40 CFR 86.1869-12(e)(1)(ii)-(iii) and (e)(2)(i)-(iv) provide specificity regarding the data and information that must be submitted to EPA as part of an application for credits using an alternative demonstration methodology.

As noted above, as part of the MY 2017-2025 rule, EPA adopted a list of pre-approved off-cycle technologies and credits that manufacturers can use beginning in MY 2014.<sup>8</sup> This third option was included in the MY 2017-2025 rule because certain types of off-cycle credits are

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<sup>5</sup> 40 CFR 86.1869-12(d).

<sup>6</sup> 40 CFR 86.1869-12(d) and (e).

<sup>7</sup> 40 CFR 86.1869-12(d)(2).

<sup>8</sup> 40 CFR 86.1869-12(a).

amenable to quantification without further demonstration, and EPA's specification of these credits therefore significantly streamlines the off-cycle credits program and reduces the testing and data burden that the program otherwise entails. Manufacturers using the pre-approved list only need to provide EPA at the time of certification with information demonstrating that their technology meets applicable definitions and qualifies for credits. There are no testing or other requirements for demonstrating emissions reductions. Manufacturers may however use the 5-cycle or alternative methodology pathways in MY 2014 and later to demonstrate that their technology achieves greater off-cycle emissions reductions than are provided by the pre-defined list. Also, manufacturers would need to use the 5-cycle or alternative methodology pathways to demonstrate eligibility for credits for technologies that are not on the list, as well as the extent of the credits.

Mercedes-Benz is applying for credits for model years prior to MY 2014 and for credits in excess of the credits on the pre-approved list. The technologies cannot be adequately demonstrated over the 5-cycle test and therefore Mercedes-Benz has applied for credits under the alternative methodology approach discussed above.

## **II. Mercedes-Benz Off-cycle Credit Application and Alternative Methodology**

Mercedes-Benz has applied for off-cycle credits using the alternative demonstration methodology pathway for the following technologies: engine stop-start, high efficiency exterior lighting, infrared glazing, and active seat ventilation. The application covers MY 2012-2016 vehicles. EPA has reviewed the application for completeness and is now making the



application available for public review and comment per the regulations.<sup>9</sup> The Mercedes-Benz off-cycle credit application with confidential business information redacted has been placed in docket EPA–HQ– OAR–2013–0643 and on EPA’s web site at <http://www.epa.gov/otaq/regs/ld-hwy/greenhouse/ld-ghg.htm>.

A summary of Mercedes’ alternative methodology for each of the four technologies is provided below. For context and comparison, in summarizing the Mercedes-Benz alternative methodology, EPA provides some background on how the Mercedes-Benz methodology compares to that developed by EPA in the MY 2017-2025 light-duty GHG rulemaking for the pre-approved list of off-cycle credits, which is contained in the Joint Technical Support Document (TSD), Chapter 5.<sup>10</sup>

#### *A. Engine Stop-Start*

Mercedes-Benz is applying for engine idle stop-start credit covering all of their MY 2012-2016 U.S. model product range (e.g., small/mid-size/large cars and light-duty trucks) (See Section II-III of Mercedes-Benz Application). Mercedes-Benz is following a similar methodology to the one EPA described in the TSD for the MY2017-2025 rule, but with unique inputs for idle time and stop-start system effectiveness which includes parameters related to Mercedes’ unique control strategy for its stop-start system.<sup>11</sup>

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<sup>9</sup> § 86.1869-12(e)(3).

<sup>10</sup> Joint Technical Support Document: Final Rulemaking for 2017-2025 Light-duty Vehicle Greenhouse Gas Emission Standards for Corporate Average Fuel Economy Standards, United States Environmental Protection Agency and National Highway Traffic Safety Administration, August 2012, EPA-420-R-12-901.

<sup>11</sup> MY2017-2025 Technical Support Document, Chapter 5, Section 5.2.8.1.

The basic methodology entails the following steps: estimate or measure the total idle fraction as a percentage of all vehicle operation in the real-world; estimate or measure the percentage of idle fraction that the stop-start system is enabled out of all the available idle time (i.e., eligible stop-start percentage or stop-start system effectiveness); determine the benefit of the stop-start system in grams per mile based on A-B testing (i.e., technology on and off); and multiply the eligible real world stop-start time (relative to the 2-cycle eligible time) by the stop-start system benefit to estimate the engine idle stop-start credit.

In lieu of the EPA default idle time derived from the MOVES model, Mercedes-Benz is proposing to apply a unique idle time specific to its vehicles. To estimate the total idle time as a percentage of all vehicle operation, Mercedes-Benz conducted a field study in calendar years 2010-2011 including 29 instrumented customer vehicles, randomly selected from the Mercedes-Benz customer base. The field study was performed for a period of 13 months in eight states: California, New York, New Jersey, Florida, Texas, Illinois, Virginia, and Arizona. These eight states represented about 65% of the Mercedes-Benz sales volume. The remaining 35% of the Mercedes-Benz sales fleet was distributed in the other 42 states not included in the idle fraction study. During the course of the study, the vehicles accumulated 311,118 miles. The 29 vehicle sample broadly represents the Mercedes-Benz models equipped with stop-start technology sold in the United States. Based on this study, Mercedes-Benz estimated that its vehicles have a 23.83% total idle fraction as a percentage of all vehicle operation.

To provide further support for its idle fraction estimate, Mercedes-Benz acquired an independent estimate of idle fraction for its vehicles from Progressive Insurance. Progressive

Insurance has about 1.4 million vehicles in its “Snapshot” Program covering 44 states (excluding California, North Carolina, Tennessee, Indiana, Arkansas, and Hawaii), over a six month period.<sup>12</sup> In the Progressive data set, there are 17,484 Mercedes-Benz vehicles which are represented in proportion to current industry sales shares. Based on the Progressive data set, the Mercedes-Benz vehicles are estimated to have an idle fraction of 23.9%. This is almost exactly the same as the 23.83% idle fraction found in the Mercedes-Benz study discussed above and used by Mercedes-Benz in their analysis. Further, since the Progressive Insurance data covers 37 out of the other 42 states not included in the Mercedes-Benz idle fraction study, this data implies that the other 35% of the sales volume not represented by the Mercedes-Benz data has consistent idle fractions. Mercedes indicated that none of the other 42 states, except for Pennsylvania, have equivalent sales volumes to the states used in the idle fraction study. As such, Mercedes-Benz concludes that the idle fraction for the other 35% of the sales volume, if different, would not have significantly altered the idle fraction estimate.

To estimate the percentage of idle fraction during which the stop-start system is enabled, Mercedes-Benz used EPA’s methodology in Chapter 5 of the Technical Support Document (TSD) for the MY2017-2025 rule, with inputs specific to Mercedes-Benz vehicles and control strategies.

The following background is provided to give some additional context on how EPA derived off-cycle credits for stop-start systems for the pre-approved menu in the MY 2017-2025 rulemaking. EPA constrained stop-start system effectiveness based on three operating temperature ranges: cold temperatures below 40 degrees Fahrenheit, mid-temperatures between

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<sup>12</sup> Of these states, only California is a major market for Mercedes-Benz.

40 and 80 degrees Fahrenheit, and hot temperatures above 80 degrees. For the cold temperature range, EPA assumed that passenger demand for heat would reduce stop-start effectiveness unless the vehicle possesses an electric heater circulation pump, or equivalent system, that supplies sufficient heat during engine off operation. For the hot temperature range, EPA assumed that passenger demand for air conditioning (A/C) would render the stop-start system inoperable, unless the manufacturer has some supplemental system to support cabin cooling. For all the temperature ranges, EPA assumed that the stop-start system always defaults on when the vehicle is keyed on. EPA assumed the overall system effectiveness would be reduced to 87.75% due to these temperature effects.

Mercedes Benz's stop-start system has several design features that differ from those used by EPA for the pre-approved menu analysis. As described in Section III of the Mercedes-Benz application, Mercedes-Benz took these factors into account in analyzing its system performance. First, the Mercedes-Benz stop-start system includes an electric heater circulation pump that maintains cabin heating in cold temperatures, and thus enables stop-start capability when heat is demanded. Second, the Mercedes-Benz system has a supplemental 12 volt battery system that supplies power for all the electrical components and accessories. This allows the main battery to support restarting and also enables stop-start capability even when A/C is demanded. Mercedes-Benz also made an adjustment to account for OBD and stop-start interactions, which limits the availability of stop-start during the first 170 seconds of vehicle operation. These adjustments resulted in an estimated fraction of effectiveness (i.e., when the system is active) of about 91.32%, compared to EPA's generic estimate of 87.75%.

In addition, the Mercedes-Benz system includes an “EcoButton” that allows customers to disable the stop-start system. An estimate of the frequency of use of the EcoButton to disable the stop-start system is included in the Mercedes-Benz calculations. Finally, the Mercedes-Benz stop-start system has a maximum engine off duration of three minutes; therefore, the stop-start system would not be active after an idle period exceeds three minutes. Based on these features, Mercedes-Benz reduced its eligible idle time of 23.83% to a total eligible idle time of 21.22% using the 91.32% system effectiveness discussed above, and an additional discount of 2.5% for EcoButton usage and idles exceeding the Mercedes-Benz system’s 3 minute engine off duration.

To determine the CO<sub>2</sub> emissions benefit of the stop-start system, Mercedes-Benz performed testing of Mercedes-Benz vehicles equipped with stop-start in different vehicle categories with the stop-start system on and off. Based on this testing, Mercedes-Benz measured a benefit of: 9.8 g/mi CO<sub>2</sub> for small size cars, 8.1 g/mi CO<sub>2</sub> for mid-size cars, 16.9 g/mi CO<sub>2</sub> for large size cars, and 15.2 g/mi CO<sub>2</sub> for light-duty trucks (e.g., SUVs). These g/mile GHG improvement values reflect the operational effectiveness of the Mercedes-Benz system during the 2-cycle testing. The effectiveness (i.e., the time the engine is off compared to the total idle time in the cycle) of the stop-start system over the 2-cycle test ranged from 67.3% to 80.4%.

Based on the eligible stop-start idle fraction of 21.22%, compared with 10% idle fraction over the 2-cycle tests, and the emissions benefits measured above, Mercedes-Benz calculated an engine stop-start credit of 11.0 g/mi CO<sub>2</sub> for small size cars; 9.1 g/mi CO<sub>2</sub> for mid-size cars; 19.0 g/mi CO<sub>2</sub> for large size cars; and 17.1 g/mi CO<sub>2</sub> for light-duty trucks (for example, for

small cars, these credits were derived as:  $(9.8 \text{ g/mi CO}_2 \times 0.2122/0.10) - 9.8 \text{ g/mi CO}_2 = 11.0 \text{ g/mi CO}_2$ ).

### *High Efficiency Exterior Lighting*

Mercedes-Benz is applying for off-cycle credits for high efficiency exterior lighting for their MY 2012-2016 U.S. model product range with the following lighting elements: low beam head lights, high beam head lights, parking/position, front turn signal, front side marker, tail lights, rear turn signal, and license plate (See Section IV of the Mercedes-Benz application). This list of lighting elements is consistent with that specified by EPA for the pre-approved list in the MY 2017-2025 rule.<sup>13</sup>

To calculate the high efficiency exterior lighting credits, Mercedes-Benz used the EPA methodology set forth in the TSD for the MY2017-2025 rule.<sup>14</sup> Specifically, Mercedes-Benz used the MY 2017-2025 rule baseline wattage values for each lighting element listed above and the time of day (e.g., day time, night time) usage rates from a study performed by Schoettle et al.<sup>15</sup> and inserted the wattage values from the Mercedes-Benz high efficiency exterior lighting to determine the wattage savings for each lighting element. In most cases, the Mercedes-Benz wattage savings for each lighting element exceeded the wattage savings projected in the MY

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<sup>13</sup> 40 CFR 86.1869-12(a)(ii).

<sup>14</sup> MY2017-2025 Technical Support Document, Chapter 5, Section 5.2.3.

<sup>15</sup> Schoettle, B., et al., "LEDS and Power Consumption of Exterior Automotive Lighting: Implications for Gasoline and Electric Vehicles," University of Michigan Transportation Research Institute, October, 2008. For the MY2017-2025 Rule, the high efficiency exterior lighting wattage for one lighting element, low beam head lights, was revised based on manufacturer comment.

2017-2025 rule (exceptions: parking/position lights at 70% savings versus 78% in the MY 2017-2025 rule; license plate light at 86% versus 90% in the MY 2017-2025 rule).

For the final credit amounts, Mercedes-Benz multiplied the wattage savings times the usage rates and a constant of 0.032 g/mi CO<sub>2</sub> /watt (based on data showing a 100 watt savings equates to 3.2 g/mi CO<sub>2</sub> savings) for a credit of 1.1 g/mi CO<sub>2</sub> total for all the high-efficiency exterior lighting elements used over the range of Mercedes-Benz models. In comparison, the default credit value for high efficiency exterior lighting in the MY2017-2025 rule is 1.0 g/mi CO<sub>2</sub>.

### *Infrared Glazing*

Mercedes-Benz is applying for off-cycle credits for infrared glazing for the MY 2012-2013 S-Class, ML-Class and GL-Class vehicles that utilize infrared glazing technology (See Section IV of Mercedes-Benz's application). The infrared glazing technology absorbs and/or reflects a percentage of the infrared solar energy emitted from the sun and reduces the amount of solar heat load transmitted into the cabin; this is termed "total solar transmittance" or "Tts." The Tts is usually expressed as a percentage and defined as the amount of solar energy that passes through the glazing, including energy absorbed and subsequently re-radiated to the interior, to the amount of solar energy imparted on the surface of glazing.<sup>16</sup> The higher this number, the more solar energy is allowed to penetrate into the passenger cabin. Therefore, a lower Tts number is better since less solar energy will penetrate the passenger cabin and, consequently, the interior cabin temperature is reduced. Infrared glazing technologies improve passenger

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<sup>16</sup> Title 17 California Code of Regulations §95600-95605: "Cool Car Standards and Test Procedures – 2012 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles."; Air Resources Board; May 8, 2009 (see:<http://www.arb.ca.gov/regact/2009/coolcars09/coolcarsappa.pdf>).

comfort, reducing the need for air conditioning (A/C) usage, which in turn, reduces vehicle fuel consumption. EPA's analysis relied on a study performed by the National Renewable Energy Laboratory (NREL) demonstrating that a one degree centigrade reduction in cabin air temperature results in a 2.2% reduction in CO<sub>2</sub> emissions resulting from a reduction in passenger compartment temperature and reduced A/C usage.<sup>17</sup>

To calculate the infrared glazing credits, Mercedes-Benz used the methods set forth in Chapter 5 of the TSD for the MY 2017-2025 rule.<sup>18</sup> This method utilizes the International Organization for Standardization's (ISO) standard #13837 for measuring the solar transmittance of infrared glazing<sup>19</sup> and a formula for estimating the effect of the solar performance of glazing technologies developed by EPA and California Air Resources Board with input from the National Renewable Energy Laboratory (NREL) and the Enhanced Performance Glass Automotive Association (EPGAA). Specifically, the contribution of each glass/glazing location to the overall interior temperature reduction is estimated using its measured Tts, relative to a baseline level, and the area of the glass/glazing location relative to the overall glass area.<sup>20</sup>

The infrared glazing used by Mercedes-Benz has the same Tts performance levels as the baseline Tts levels specified in the MY2017-2025 rule: 62% for all glazing locations, except for roofites and rear side glazings of crossovers, SUVs, and minivans, which have a baseline Tts of 40%. Based on the Tts levels for Mercedes Benz's infrared glazing and the formula described above, Mercedes-Benz calculated a credit of 0.8 to 1.7 g/mi CO<sub>2</sub> for the infrared glazing used

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<sup>17</sup> Rugh, J., Farrington, R. "Vehicle Ancillary Load Reduction Project Close-Out Report," National Renewable Energy Laboratory Technical Report NREL/TP-540-42454, January, 2008.

<sup>18</sup> MY2017-2025 Technical Support Document, Chapter 5, Section 5.2.10.

<sup>19</sup> International Organization for Standardization's (ISO) 13837: "Road vehicles -- Safety glazing materials -- Method for the determination of solar transmittance," April 15, 2008.

<sup>20</sup> 40 CFR 86.1869-12(b)(1)(viii)(A).



over the range of Mercedes-Benz models. In comparison, the default credit values for infrared glazing in the MY2017-2025 rule are scalable depending on such factors as the amount of glass in the vehicle and the performance of the glazing, up to a maximum of 2.9 g/mi CO<sub>2</sub> for cars and 3.9 g/mi CO<sub>2</sub> for trucks.

#### *Active Seat Ventilation*

Mercedes-Benz is applying for off-cycle credits for applicable vehicles that have active seat ventilation on both the front row' driver and passenger seats (See Section IV of Mercedes-Benz's application).<sup>21</sup> The Mercedes-Benz active seat ventilation technology has the capability to both pull air away from and push air to the seating surface.

To calculate the active seat ventilation credits, Mercedes-Benz used the methods set forth in Chapter 5 of the MY 2017-2025 TSD.<sup>22</sup> Based on the NREL study mentioned above, a 7.5% reduction in air conditioning (A/C) related emissions could be achieved by lowering the surface temperature of the vehicle seats.<sup>23</sup>

Based on the seat location criteria, capability, and the methodology described above, Mercedes-Benz estimated a credit of 1.0 g/mi CO<sub>2</sub> for cars and 1.3 g/mi CO<sub>2</sub> for trucks for the active seat ventilation technology used over the range of Mercedes-Benz models. These values are identical to the default values in the pre-approved off-cycle credit list in the MY 2017-2025 rule. Therefore, Mercedes-Benz concludes that its active seat ventilation system achieves

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<sup>21</sup> 40 CFR 86.1869-12(b)(4)(viii).

<sup>22</sup> MY2017-2025 Technical Support Document, Chapter 5, Section 5.2.11.

<sup>23</sup> Ibid 12.

equivalent performance to that assumed in the MY 2017-2025 rule. Mercedes-Benz could use the pre-approved list to claim these credits beginning in MY 2014, but since they are seeking credits to begin in MY 2012, and because these technologies are not measurable through the 5-cycle testing pathway, Mercedes-Benz is applying for these credits through this alternative technology pathway.

### **III. EPA Decision Process**

EPA is providing a 30-day comment period on this application for an alternative methodology for off-cycle credits, as specified by the regulations. The manufacturer may submit a written rebuttal of comments for EPA's consideration, or may revise its application in response to comments; EPA would review a revised application as if it were a new application.<sup>24</sup> After reviewing any public comments and any rebuttal of comments submitted by Mercedes-Benz, EPA will make a final decision regarding the credit request. EPA will make its decision available to the public by placing a decision document in the docket as specified in the MY 2017-2025 rule.<sup>25</sup> and on EPA's web site at <http://www.epa.gov/otaq/regs/ld-hwy/greenhouse/ld-ghg.htm>.

An EPA decision to approve Mercedes Benz's off-cycle credit request would only apply to the vehicles specified in the Mercedes-Benz application for MYs 2012-2016. Such decision would not apply to other Mercedes-Benz vehicles or vehicles from other manufacturers. While the

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<sup>24</sup> 40 CFR 86.1869-12(e)(3)(iii).

<sup>25</sup> 40 CFR 86.1869-12(e)(4)(iii).

broad methodology used by Mercedes-Benz could potentially be used for other vehicles and by other manufacturers, the vehicle specific data needed to demonstrate the off-cycle emissions reductions would likely be different. In such cases, a new application would be required, including an opportunity for public comment.

Dated: September 20, 2013.

**Byron Bunker,**  
**Director, Compliance Division,**  
*Office of Transportation and Air*  
*Quality, Office of Air and Radiation.*

*[FR Doc. 2013-23964 Filed 09/30/2013 at 8:45 am; Publication Date: 10/01/2013]*